

Paula's Pizza

Paula's favorite pizza place offers six toppings—sausage, onions, mushrooms, pepperoni, olives, and peppers. Paula ordered pizza with mushrooms and olives.

Unfortunately, the server only wrote down that Paula ordered two toppings, and didn't write down which two they were. The chef doesn't know Paula, and decided to pick two toppings at random.

1. How many different two-topping pizzas are possible?
2. What is the probability that Paula will get the pizza that she ordered?
3. What is the probability she will get something different?
4. Paula actually likes all of the toppings except sausage and pepperoni. What is the probability that she will get a pizza she likes? What is the probability that she'll get a pizza she doesn't like?